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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,721	10/31/2003	Philip J. Pietraski	I-2-0433.1US	1573

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VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER

EWART, JAMES D

ART UNIT PAPER NUMBER

2617

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/698,721	Applicant(s) PIETRASKI, PHILIP J.	
	Examiner James D. Ewart	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006 RCE.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,12-16,32-36,38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,12-16 and 32-36 is/are rejected.
- 7) ☒ Claim(s) 38 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed July 24, 2006, have been fully considered by Examiner, but they are not deemed persuasive. Regarding Applicant's argument that Bergel does not teach estimating the future quality of the downlink channel, the Examiner disagrees. Prior art of Applicant teaches that the mobile device (UE) determines the CQI and transmits the CQI to the base station (node B) however because it takes time to calculate the CQI and transmit it to the base station it is delayed and this delay causes the CQI to be inaccurate. Applicant's solution is to predict the future value based on past and present values. Bergel teaches predicting future channel conditions based on past and present values to avoid inaccuracies due to delay. In addition, Bergel teaches that the future channel conditions are related to fading which is a measurement of quality (see 0009). The combined teaching of Applicant's admitted prior art and Bergel meets the claimed invention. Further, the claim merely requires predicting future quality between a transmitter and receiver. The motivation to combine is to reflect a more accurate description of the channel condition to provide an improved compensation technique and is found in the Bergel reference (see: 0010, 0021 and abstract).

2. The cancellation of claims 8, 19 and 37 has overcome the new matter objection of these claims and the Examiner withdraws the objection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3,6-14,17-18,20-25 and 28-34 are rejected under 35 USC 103(a) as being unpatentable over admitted prior art of applicant in view of Bergel (U.S. Patent Publication No. 2003/0017835)

Referring to claim 1, admitted prior art of applicant teaches a method for providing feedback regarding the quality of a communication channel which is transmitted between a transmitter and a receiver (0008 – 0010); the method comprising: transmitting a control communication from said transmitter to said receiver (0008), said control communication including information regarding the allocation of resources in a subsequent downlink data communication (0008); receiving at said receiver said control communication and awaiting said downlink data communication (0008); transmitting from said transmitter said downlink data communication over a downlink channel (0009); receiving at said receiver said downlink data communication (0009); performing at said receiver at least one current quality measurement on said downlink data communication to determine the current quality of said downlink data channel (0009); deriving, based on said performing step, a channel quality indication (CQI) (0009); and transmitting said CQI from said receiver to said transmitter (0010); but does not teach whereby said deriving step estimates the future quality of said downlink channel to derive said CQI. Bergel teaches whereby said deriving step estimates the future quality of said downlink channel to derive said CQI (0021, 0024 and Figure 4B; 120, 130). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art

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to combine the admitted prior art of applicant with the teaching of Bergel whereby said deriving step estimates the future quality of said downlink channel to derive said CQI to provide an improved compensation technique for transmission over a channel (0010).

Referring to claim 12, admitted prior art of applicant teaches a method for providing channel quality measurements on a downlink communication channel transmitted from a receiver to a transmitter (0008 – 0010); the method comprising: monitoring said downlink communication channel at said receiver (0009); performing at least one current measurement on said downlink communication channel to determine the current quality of said downlink data channel (0009); deriving, based on the performing step a quality indicator of the downlink communication channel (0009); and transmitting said indicator to said transmitter (0010); but does not teach whereby said deriving step predicts the future quality of the downlink communication channel. Bergel teaches whereby said deriving step predicts the future quality of the downlink communication channel (0021, 0024 and Figure 4B; 120, 130). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the admitted prior art of applicant with the teaching of Bergel whereby said deriving step predicts the future quality of the downlink communication channel to provide an improved compensation technique for transmission over a channel (0010).

Referring to claim 32, admitted prior art of applicant teaches a method for providing feedback regarding the quality of a communication channel which is transmitted between a transmitter and a receiver (0008 – 0010); the method comprising: transmitting a control communication from said transmitter to said receiver (0008), said control communication

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including information regarding the allocation of resources in a subsequent downlink data communication (0008); receiving at said receiver said control communication and awaiting said downlink data communication (0008); transmitting from said transmitter said downlink data communication over a downlink data channel (0009); receiving at said receiver said downlink data communication (0009); transmitting from said transmitter a pilot channel communication over a pilot channel (0012); receiving at said receiver said pilot channel communication (0012); performing at said receiver at least one current quality measurement on said downlink data communication and said pilot channel communication to determine the current quality of said downlink data channel (0012); deriving, based on said performing step, a channel quality indication (CQI) (0012); and transmitting said CQI from said receiver to said transmitter (0012); whereby deriving step estimates the current quality of said downlink data channel to derive said CQI (0012), but does not teach whereby said deriving step predicts the future quality of the downlink communication channel. Bergel teaches whereby said deriving step predicts the future quality of the downlink communication channel (0021, 0024 and Figure 4B; 120, 130). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the admitted prior art of applicant with the teaching of Bergel whereby said deriving step predicts the future quality of the downlink communication channel to provide an improved compensation technique for transmission over a channel (0010).

Referring to claims 2,13 and 33, Bergel further teaches including storing said at least one current quality measurement (0026 and Figure 4B).

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Referring to claims 3,14 and 34, Bergel further teaches wherein said deriving step further includes retrieving at least one stored quality measurement and utilizing said at least one stored quality measurement and said at least one current quality measurement to derive said predictive CQI (0049 and Figure 4B).

4. Claims 4,15 and 35 are rejected under 35 USC 103(a) as being unpatentable over admitted prior art of applicant and Bergel and further in view of Koorapaty et al. (U.S. Patent Publication No. 2003/0129992).

Referring to claims 4,15 and 35, admitted prior art of applicant and Bergel teach the limitations of claims 4,15 and 35, but do not teach storing predicted values. Koorapaty et al. teaches storing predicted values (0010). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Koorapaty et al. of storing predicted values to compare the predicted values with the measured values (0012).

5. Claims 5,16 and 36 are rejected under 35 USC 103(a) as being unpatentable over admitted prior art of applicant and Bergel and further in view of Bruckert et al. (U.S. Patent No. 5,305,468)

Referring to claims 5, 16 and 36, admitted prior art of applicant and Bergel teach the limitations of claims 5, 16 and 36, but do not teach wherein said deriving step utilizes a linear predictive algorithm to derive the predicted value. Bruckert et al. teaches wherein said deriving step utilizes a linear predictive algorithm to derive the predicted value (Column 4, Lines 42-45).

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Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teaching of admitted prior art of applicant and Bergel with the teaching of Bruckert et al. wherein said deriving step utilizes a linear predictive algorithm to derive the predicted value to provide a more accurate power control command (Column 1, Lines 47-49).

Allowable Subject Matter

6. Claims 38 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Reason for allowable subject matter is provided below:

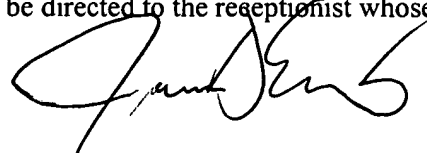
Regarding claims 38 and 39, the references cited do not teach wherein the CQI includes at least one of a recommended transport block size, modulation format or number of codes.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Ewart whose telephone number is (571) 272-7864. The examiner can normally be reached on M-F 7am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571)272-7872. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2600.



Ewart August 22, 2006



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600